ORDER NO. MD0508312C1
A6

Active Subwoofer System

SB-WA933P

Colour
(S)...Silver Type

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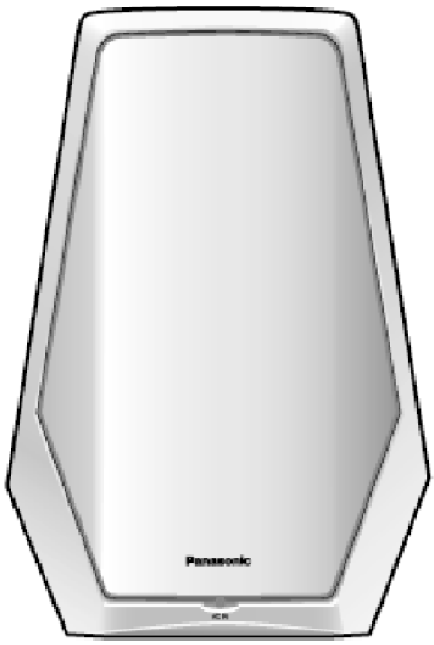

SB-WA933

SPECIFICATIONS

Specification	
■ Active subwoofer	
Type	1 way, 2 speaker system (Bass reflex)
Speaker unit(s)	Impedance 4 Ω
1. Woofer	15 cm (5-7/8”) Cone type
2. Woofer	15 cm (5-7/8”) Cone type
Output sound pressure	84 dB/W (1.0 m)
Frequency range	34 Hz-220 Hz (-16 dB)
	38 Hz-190 Hz (-10 dB)
Dimensions (W x H x D)	285 mm x 402 mm x 520 mm
	(11-7/32” x 15-13/16” x 20-15/32”)
Mass	15 kg (33.1 lbs)
■ General	
Power supply	AC 120V, 60Hz
Power consumption	390 W
■ System: SC-HT933(P)	Music Center: SA-HT933(P)
	Satellite Speakers: SB-HT920(P)
	Active Subwoofer: SB-WA933(P)

Note :
Specifications are subject to change without notice.
Mass and dimensions are approximate.

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SB-HT920P-S

Front Speaker	SB-PF920P-S
Center Speaker	SB-PC920P-S
Surround Speaker	SB-FS920P-S

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Panasonic

1. Safety Precautions

1.1. GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, ensure that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, check for leakage current to prevent from being

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exposed to shock hazards.

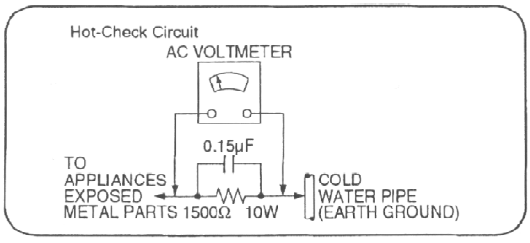
(This "Safety Precaution" is applied only in U.S.A.)

1. **Before servicing, unplug the power cord to prevent an electric shock.**
2. **When replacing parts, use only manufacturer's recommended components for safety.**
3. **Check the condition of the power cord. Replace if wear or damage is evident.**
4. **After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.**
5. **Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.**

1.1.1. LEAKAGE CURRENT COLD CHECK

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Using an ohmmeter measure the resistance value, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2 Ω . / When the exposed metal does not have a return path to the chassis, the reading must be ∞ .**

Fig. 1



1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**

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2. **Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.**
3. **Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. Should the measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be examine and rechecked before it is returned to the customer.**

1.1.3. Caution for fuse replacement

(For English)
CAUTION:
Replace with the same type fuse:
(Manufacturer: Hollyland Co. Ltd., Type: F1, 6A 125V)

(For Canadian French)
ATTENTION:
Utiliser un fusible de rechange de même type:
(Fabricant: Hollyland Co. Ltd., Type: F1, 6A 125V)

2. Handling the Lead-free Solder

2.1. About lead free solder (PbF)

Distinction of PbF P.C.B. :
P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.
Caution:

- **Pb free solder has a higher melting point than standard solder: Typically the melting point is 50 - 70°F (30 - 40°C) higher. / Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ±**

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10°C).

- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

3. Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C601 ~ C604 through a 10 Ω, 1 W resistor to ground.

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

Current consumption at AC 120V, 60Hz in NO SIGNAL mode (volume at min) should be ~1000 mA .

4. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.

- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are

"shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.

2. Determine the cause of the problem and correct it.

3. Turn on the power once again after one minute.

Note :

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

5. Connection of the Speaker Cables

- Be sure to connect speaker cables before connecting the AC power supply cord.

- The load impedance of any speaker used with this unit must be 4 Ω .

- Be sure to connect the cable from the right speaker to the right terminal and the cable from the left speaker to the left terminal.

1. Strip off the outer covering, and twist the center conductor. Make sure the bare ends of the wires are not unravelled. (If they are, twist them tight again.)

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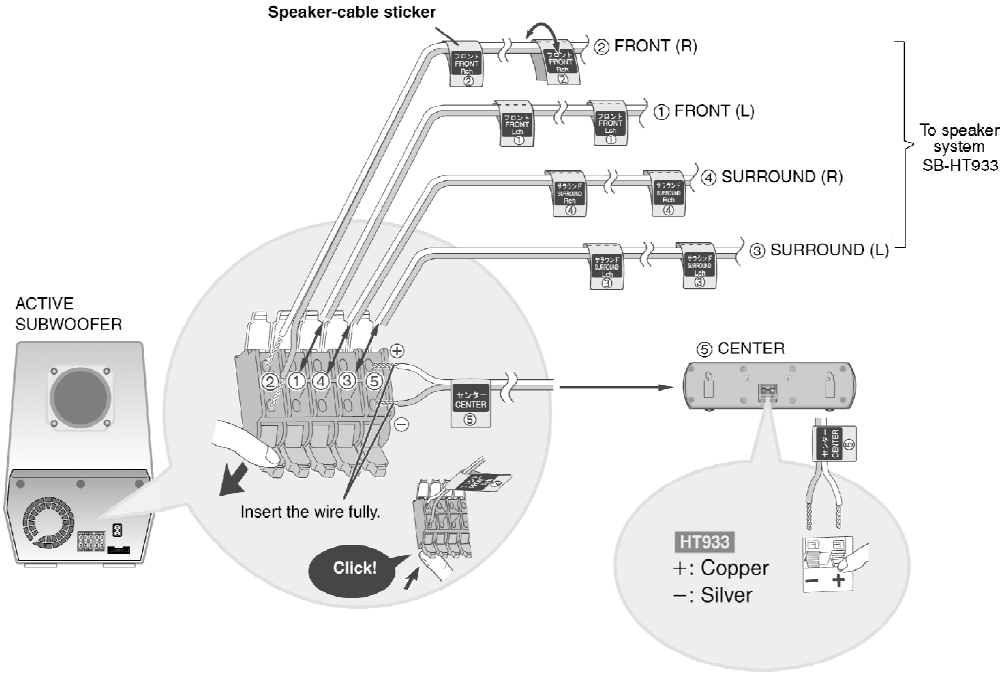
2. Insert the wire to the rear panel of the unit and close the lever.



Note

- Never short-circuit positive (+) and negative (−) speaker wires.
- Be sure to connect only positive (copper) wires to positive (+) terminals and negative (silver) wires to negative (−) terminals. Incorrect connection can damage the speakers.

6. Disassembly Procedure

“ATTENTION SERVICER”

Some chassis components may have sharp edges.
Be careful when disassembling and servicing.

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.

2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.

3. Select items from the following index when checks or replacement are required.

6.1. Disassembly flow chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart below.

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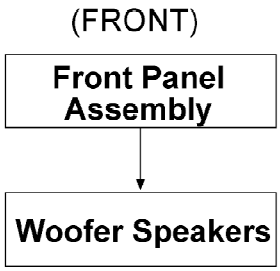
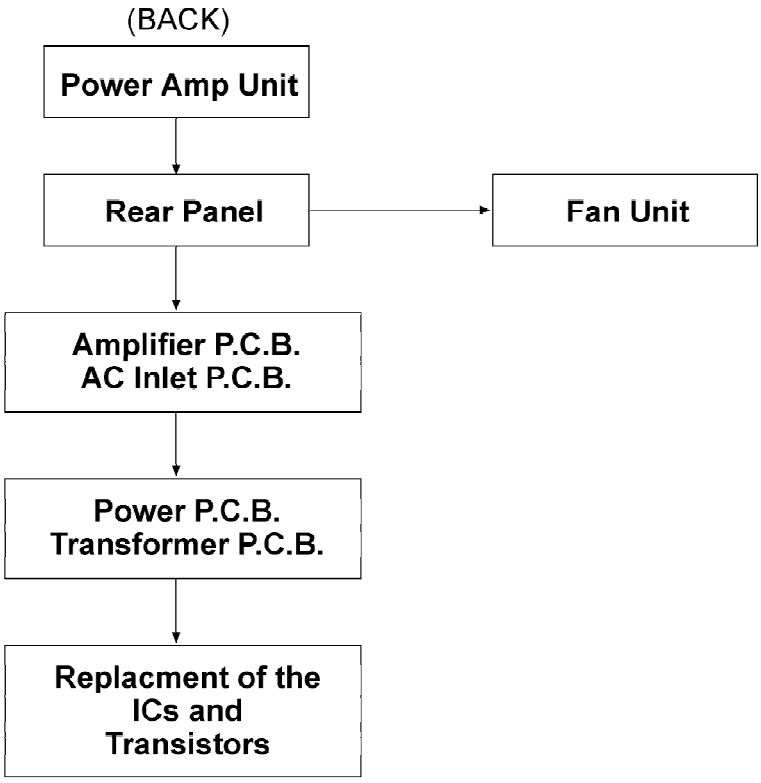
6.1.1. Disassembly of the Woofer Speakers



6.1.2. Disassembly of the Power Amp Unit



6.2. Disassembly of the Speaker Unit and Checking of the P.C.B.

6.2.1. Disassembly of the Front Panel Unit

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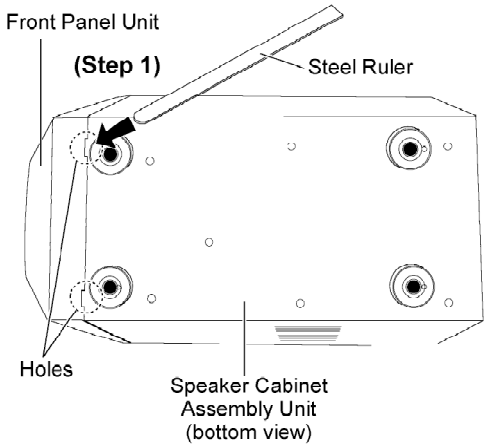
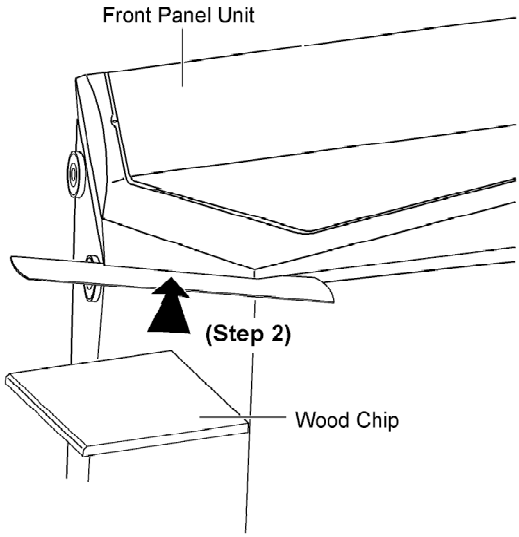
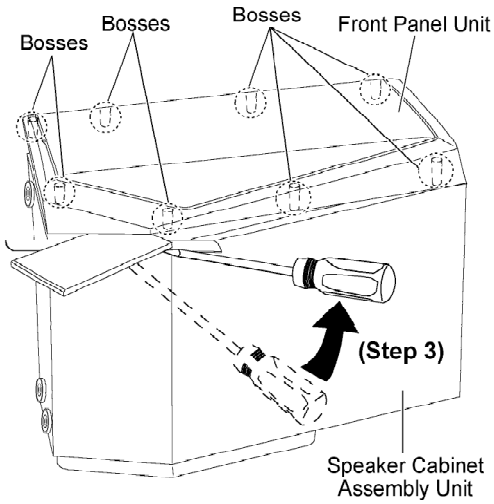


Step 1: Slot in a steel ruler into the holes to give a gap between the Front Panel unit and the speaker cabinet assembly unit as arrow shown.



Steps 2: Slot a piece of wood chip in between the Front Panel unit and the steel ruler as arrow shown.



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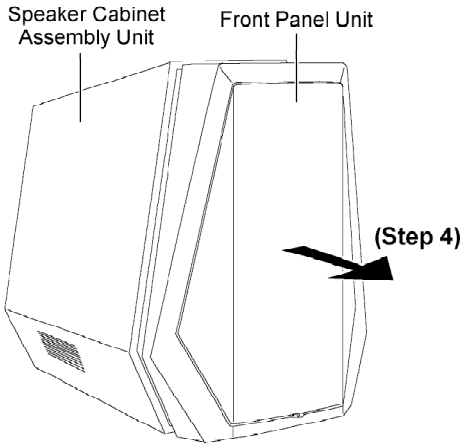
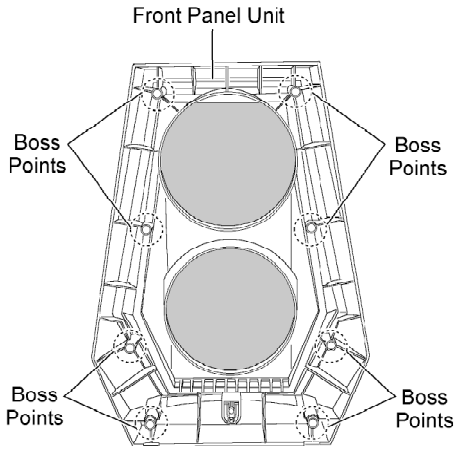
Step 3: Use the screwdriver slightly lift up the Front Panel unit as arrow shown.
Note:
Be careful with the bosses which are glued to the unit.



Step 4: Remove the Front Panel unit from the speaker cabinet assembly unit as arrow shown.

- Assembly of the Front Panel unit.



Step 1: Clean up the remaining glue at the 8 boss points and replace with the normal glue.

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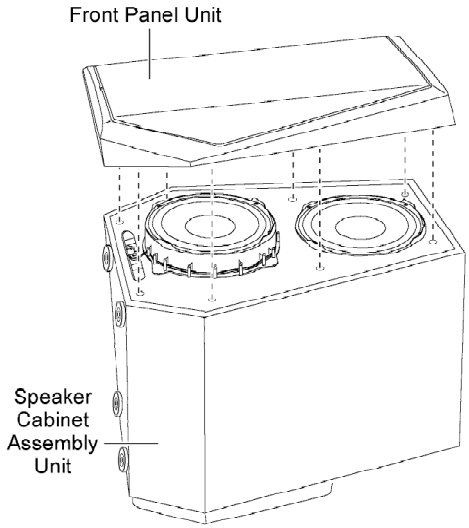
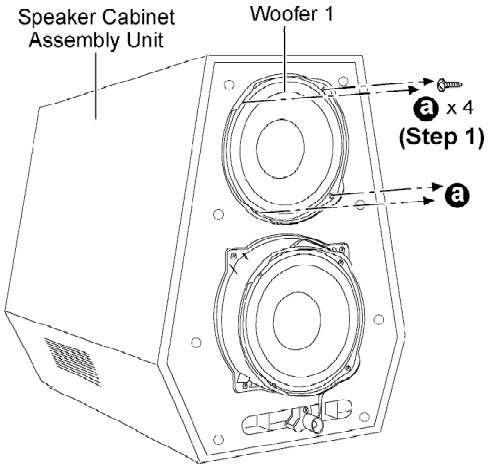


Step 2: Replace the Front Panel unit firmly back to the speaker cabinet assembly unit.

6.2.2. Disassembly of Woofer Speaker Unit 1

Follow Step (1) to Step (4) described in section 6.2.1.



Step 1: Remove 4 screws from the Woofer 1.

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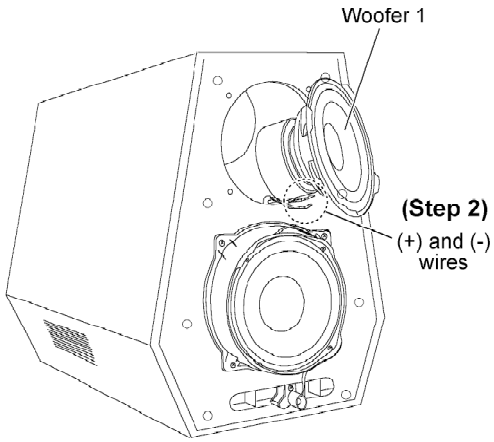
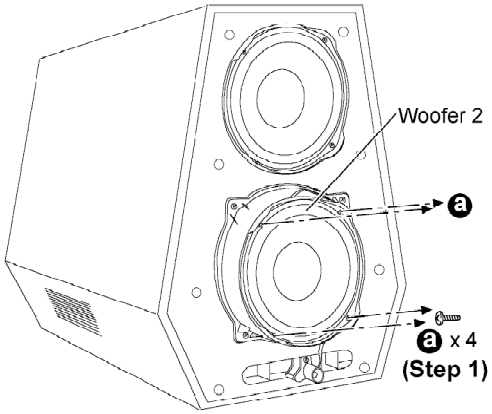


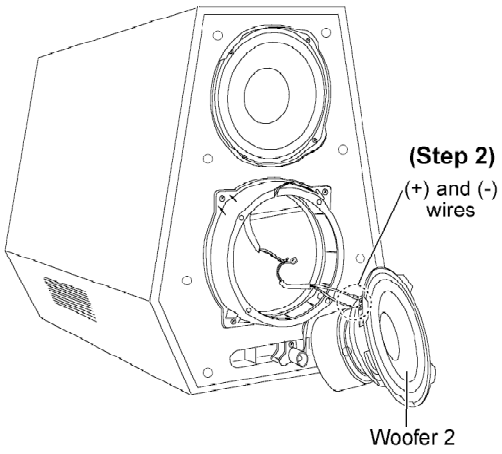
Step 2: Remove the Woofer 1 by detaching the (+) and (-) wires.

6.2.3. Disassembly of Woofer Speaker Unit 2

Follow Step (1) to Step (4) described in section 6.2.1.



Step 1: Remove 4 screws from the Woofer 2.



Step 2: Remove the Woofer 2 by detaching the (+) and (-) wires.

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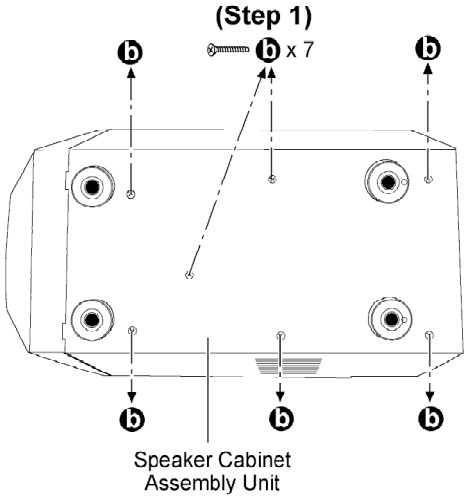
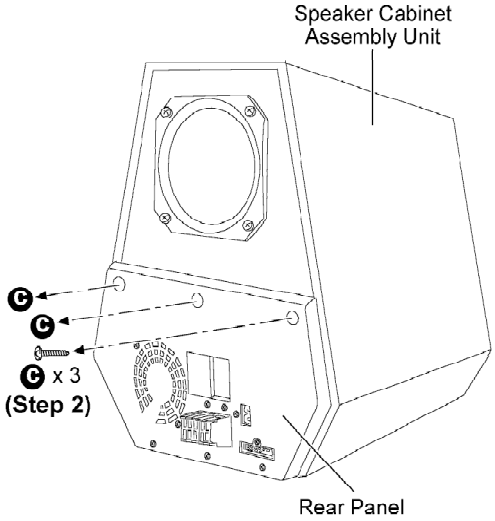
6.2.4. Disassembly of the Power Amp Unit



Step 1: Remove 7 screws from the bottom of the speaker cabinet assembly unit.



Step 2: Remove 3 screws from the rear panel.

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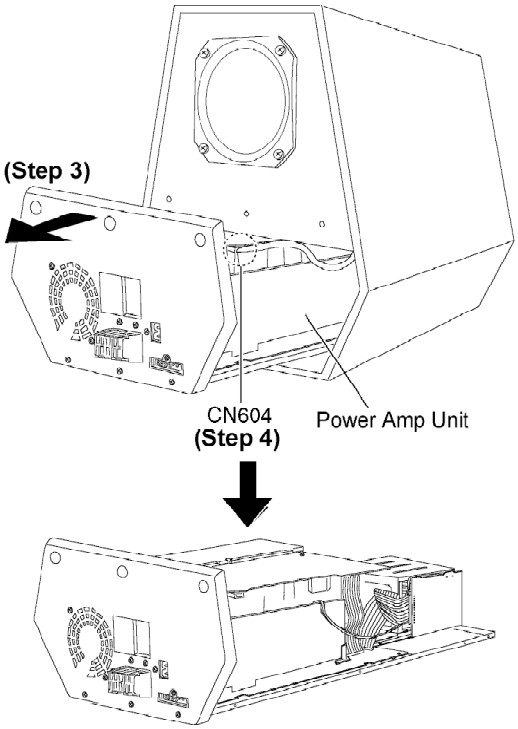
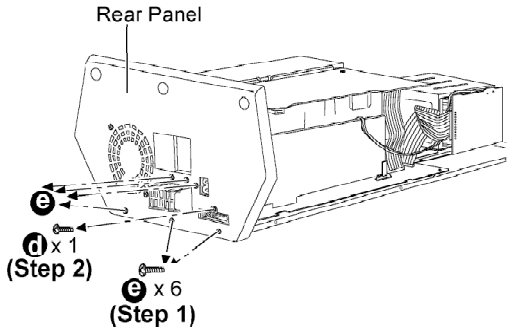


Step 3: Slightly pull out the Power Amp unit as arrow shown.
Step 4: Disconnect the connector CN604 and pull out the entire Power Amp unit.

6.2.5. Disassembly of the Rear Panel and Fan Unit

Follow Step (1) to Step (4) described in section 6.2.4.



Steps 1 and 2: Remove 7 screws from the rear panel.

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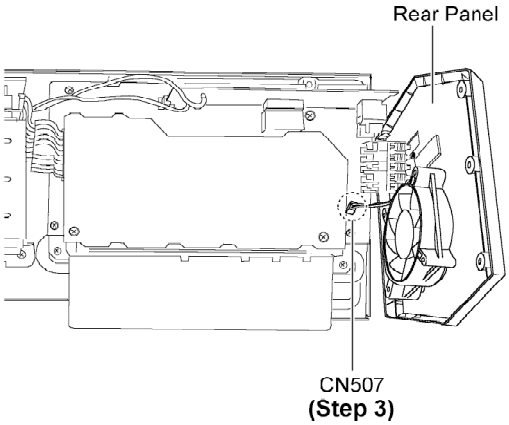
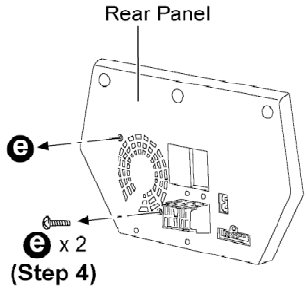
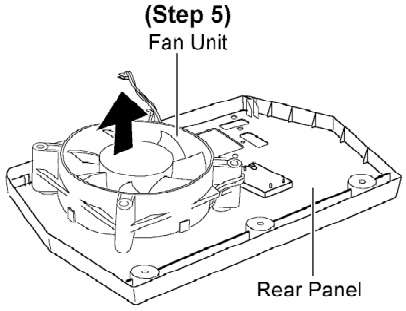


Step 3: Disconnect the connector CN507 to detach the rear panel.



Step 4: Remove 2 screws from the rear panel.



Step 5: Lay the rear panel flat and remove the fan unit as arrow shown.

6.2.6. Disassembly and checking of the Amplifier P.C.B. and AC Inlet P.C.B.

Follow Step (1) to Step (4) described in section 6.2.4.
Follow Step (1) to Step (3) described in section 6.2.5.

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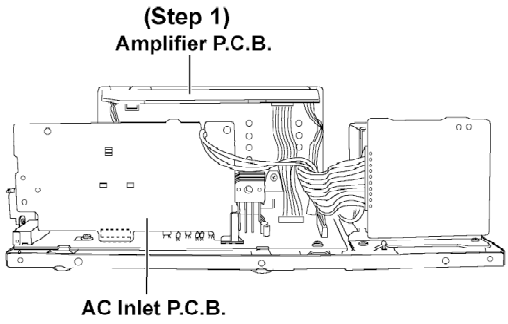
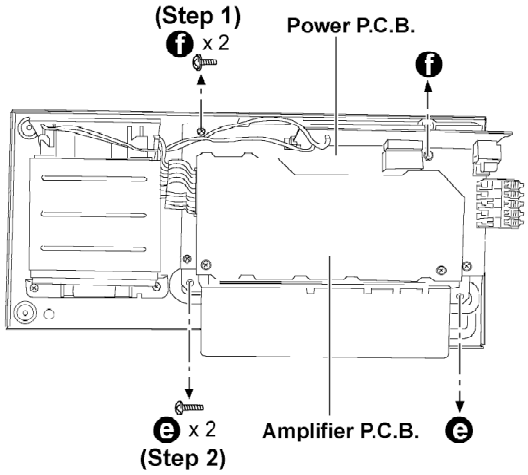


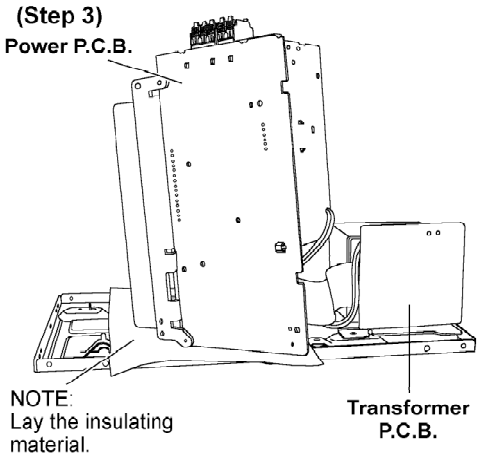
Step 1: Check both Amplifier P.C.B. and AC Inlet P.C.B.

6.2.7. Disassembly and checking of the Power P.C.B. and Transformer P.C.B.

Follow Step (1) to Step (4) described in section 6.2.4.
Follow Step (1) to Step (3) described in section 6.2.5.



Steps 1 and 2: Remove 4 screws.



Step 3: Flip the Power P.C.B. as shown for checking both Power P.C.B. and Transformer P.C.B.

6.2.8. Replacement of Power ICs and Transistors

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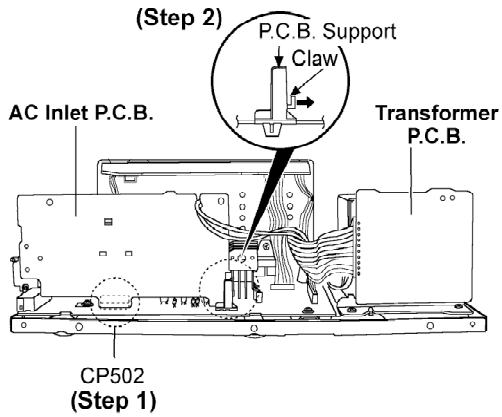
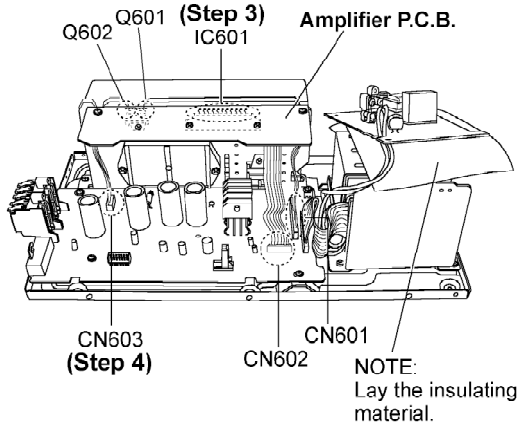
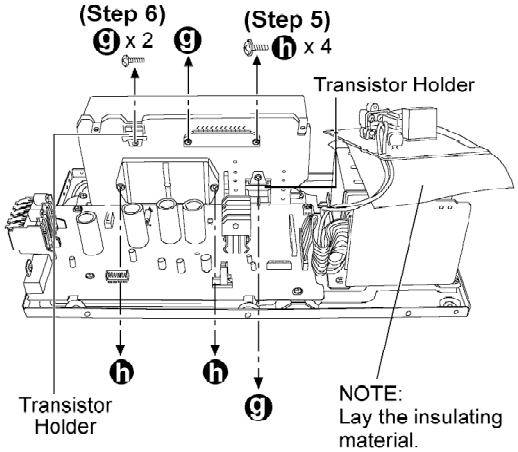
Follow Step (1) to Step (4) described in section 6.2.4.
Follow Step (1) to Step (3) described in section 6.2.5.



Step 1: Disconnect the connector CP502.
Step 2: Remove the AC Inlet P.C.B. by pulling the P.C.B. support claw as arrow shown.



Step 3: Desolder the terminals of IC601, Transistors Q601 and Q602.
Step 4: Disconnect the connectors CN601, CN602 and CN603 and remove the Amplifier P.C.B.



Step 5: Remove 4 screws.

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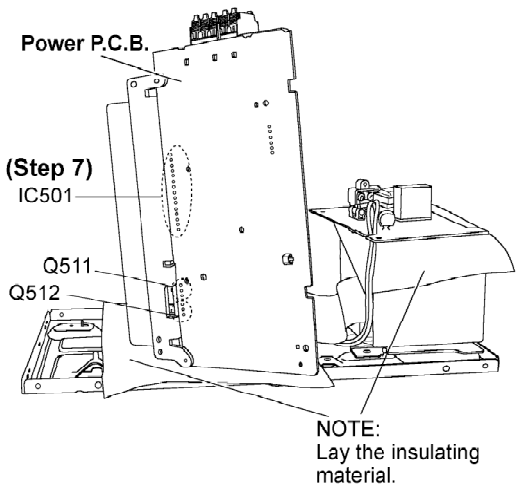
Step 6: Remove 2 screws and the transistor holders.



Step 7: Flip the Power P.C.B. as shown to desolder the terminals of the Power IC501, Transistors Q511 and Q512.

7. Voltage Measurement and Waveform Chart

7.1. Voltage Measurement

7.1.1. AC INLET P.C.B.

7.1.2. POWER P.C.B.

7.1.3. AMPLIFIER P.C.B.

7.2. Waveform

8. Block Diagram

9. Notes of Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

- Importance safety notice :

Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound

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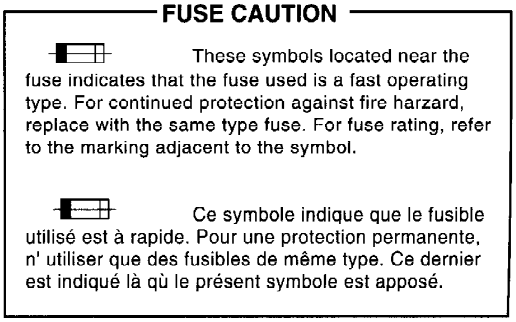
(capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- **Cover the parts boxes made of plastics with aluminium foil.**
- **Put a conductive mat on the work table.**
- **Ground the soldering iron.**
- **Do not touch the pins of IC, LSI or VLSI with fingers directly.**

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F1 6A, 125V FUSE.
RISK OF FIRE-REPLACE FUSE AS MARKED.


FUSE CAUTION
These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire harzard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.
Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là qù le présent symbole est apposé.

10. Schematic Diagram

10.1. Power Circuit

10.2. AC Inlet Circuit and Transformer Circuit

10.3. Amplifier Circuit

11. Printed Circuit Board

11.1. Power P.C.B.

11.2. AC Inlet P.C.B. and Transformer P.C.B.

11.3. Amplifier P.C.B.

12. Wiring Connection Diagram

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13. Illustration of IC's, Transistors and Diodes

14. Parts Location and Replacement Parts List

Notes:

- Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
Parts without these indications can be used for all areas.

- Capacitor values are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.

- Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM).

- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

- [M] Markings in the Remarks columns indicates parts supplied by PAVCSG.

14.1. Cabinet

14.1.1. Cabinet Parts Location

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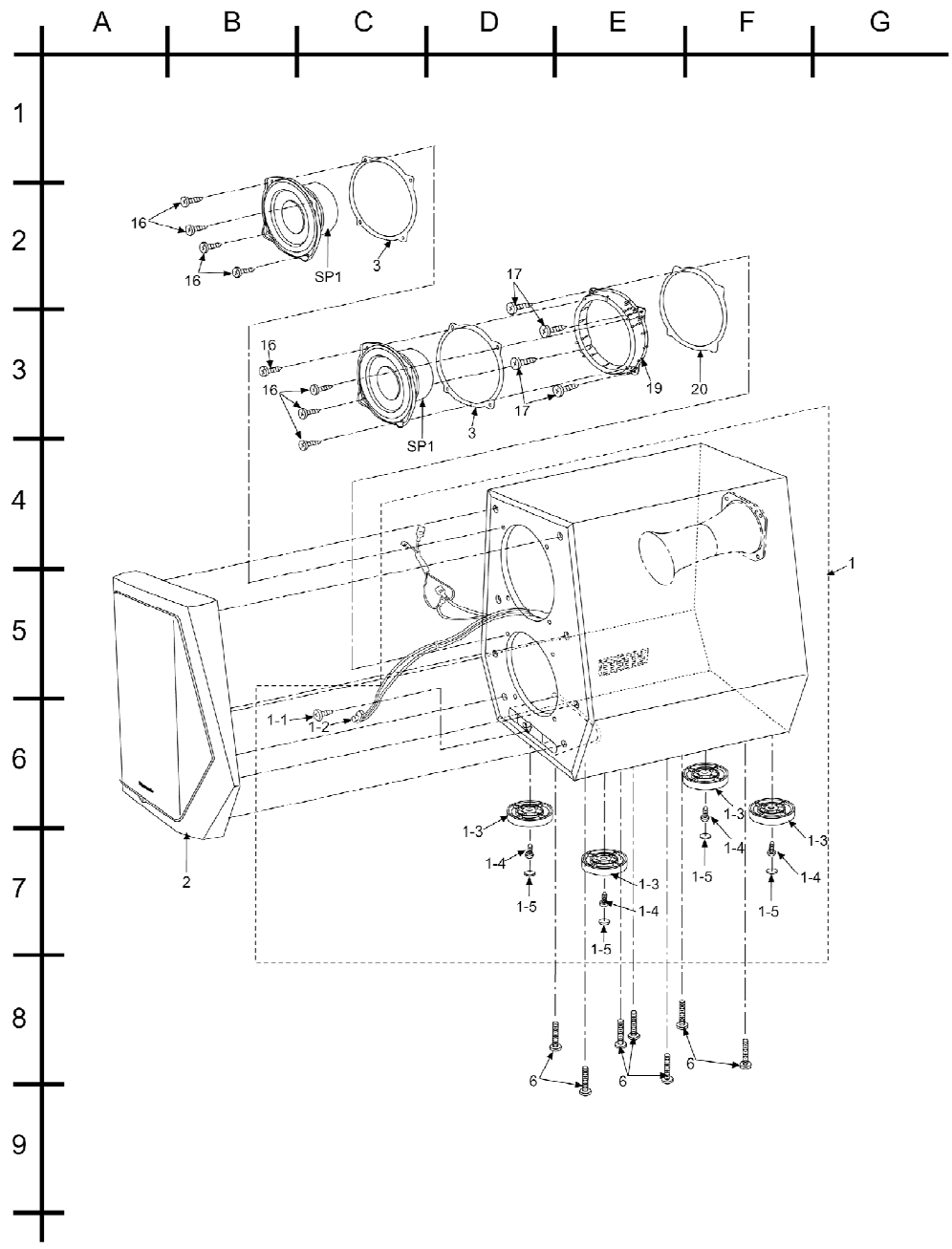

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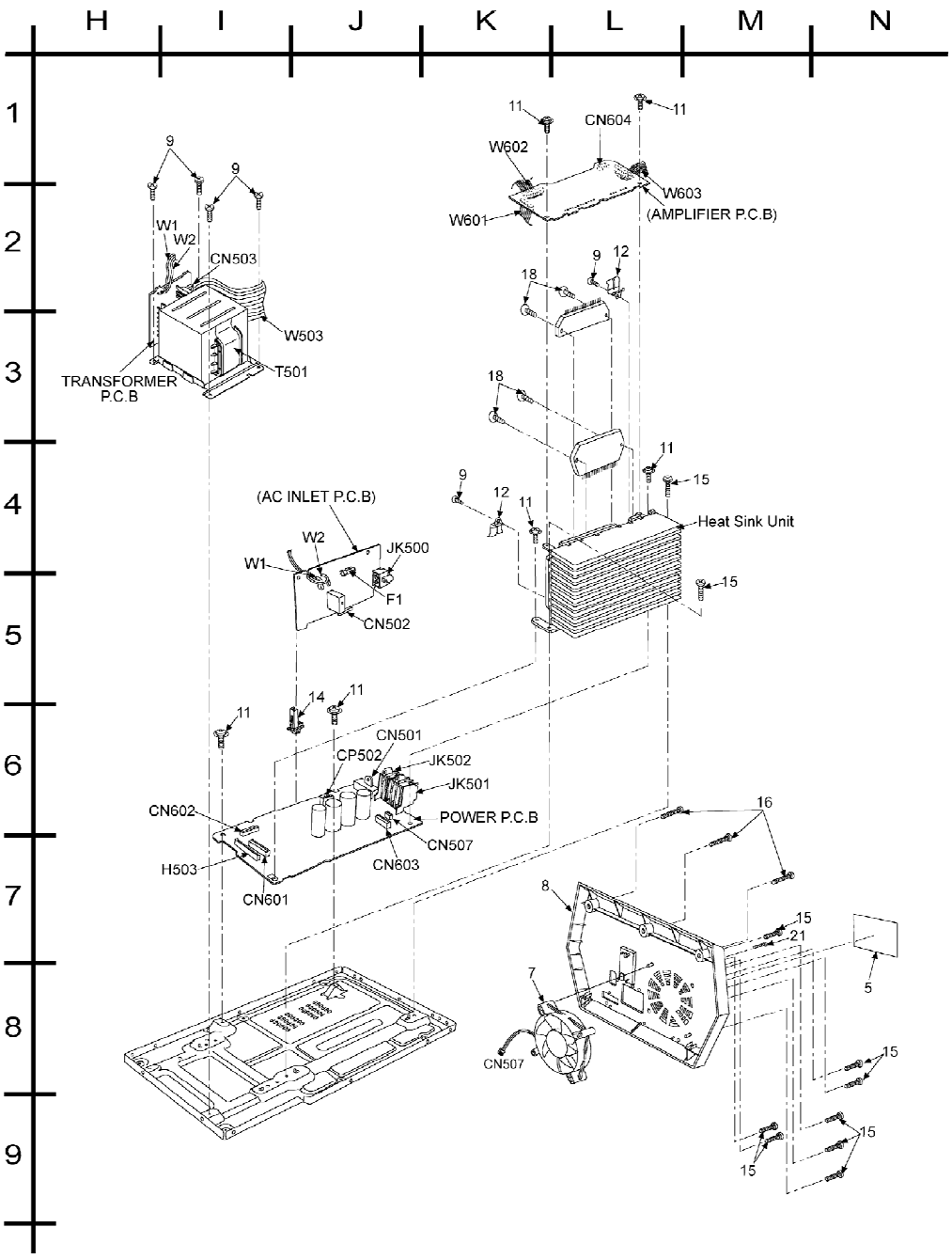

14.1.2. Cabinet Parts List

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Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKHBWA930PP	SUB WOOFER CAB ASS'Y	[M]
1-1	XTB3+12GFJ	SCREW	[M]
1-2	B3AAA0000583	LED (RED)	[M]
1-3	RGKX0284-J	LEG	[M]
1-4	XTB4+12AFJ	WOOD SCREW (TBZP)	[M]
1-5	RKAX0019-KK	LEG CUSHION	[M]
2	RYQX0168-S	FRONT PANEL UNIT	[M]
3	RMQX0110	EVA PACKING (WOOFER)	[M]
5	RGNX0313-S	SPEC LABEL	[M]
6	XTS4+20JFJ	SCREW	[M]
7	REM0072-4	FAN	[M]
8	RGRX0041D-H	REAR PANEL	[M]
9	RHD30119-S	SCREW	[M]
11	RHD30092-1	SCREW	[M]
12	RMC0158-S2	TR-FIXTURE	[M]
14	RMN0203	PCB HOLDER	[M]
15	XTB3+10JFJ	SCREW	[M]
16	XTB3+16AFJ	SCREW	[M]
17	XTB4+10GFJ	SCREW	[M]
18	XTW3+15TFJ	SCREW	[M]
19	RGPX0175	WOOFER SPACER	[M]
20	RMQX0111	EVA PACKING FOR WOOF	[M]
21	XTN26+10JFJ	SCREW	[M]

14.2. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REPX0471E	POWER P.C.B./ AC INLET P.C.B./ TRANSFORMER P.C.B.	[M] RTL
	REPX0472A	AMPLIFIER P.C.B.	[M] RTL
		INTEGRATED CIRCUITS	
IC501	RSN311W64D-P	IC HIC (PBF)	[M]
IC601	RSN312H24A-P	IC HIC	[M]
		TRANSISTORS	
Q501	B1AACF000117	TRANSISTOR	[M]
Q502	B1AACF000117	TRANSISTOR	[M]
Q503	B1AACF000117	TRANSISTOR	[M]
Q505	B1AACF000117	TRANSISTOR	[M]
Q506	B1GCCFJJ0016	TRANSISTOR	[M]
Q511	B1BACG000048	TRANSISTOR	[M]
Q512	B1BCCG000023	TRANSISTOR	[M]
Q515	B1AACF000117	TRANSISTOR	[M]
Q516	B1GACFJJ0018	TRANSISTOR	[M]
Q517	B1BACG000048	TRANSISTOR	[M]
Q519	B1AACF000117	TRANSISTOR	[M]
Q520	B1GCCFJJ0016	TRANSISTOR	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
Q552	B1ACCF000094	TRANSISTOR	[M]
Q553	2SD0592ARA	TRANSISTOR	[M]
Q554	B1ACCF000094	TRANSISTOR	[M]
Q555	2SD0592ARA	TRANSISTOR	[M]
Q556	B1ACCF000094	TRANSISTOR	[M]
Q557	2SD0592ARA	TRANSISTOR	[M]
Q559	B1AACF000117	TRANSISTOR	[M]
Q601	B1BACG000048	TRANSISTOR	[M]
Q602	B1BCCG000023	TRANSISTOR	[M]
Q603	B1BAAJ000003	TRANSISTOR	[M]
		DIODES	
D500	B0AACK000004	DIODE	[M]
D501	B0JAPG000019	DIODE	[M]
D502	B0JAPG000019	DIODE	[M]
D503	MA2C700A0F	DIODE	[M]
D504	B0AACK000004	DIODE	[M]
D508	B0AACK000004	DIODE	[M]
D509	B0BA5R100013	DIODE	[M]
D510	B0BA5R700008	DIODE	[M]
D525	B0BA6R600008	DIODE	[M]
D527	B0EAKM000122	DIODE	[M]
D528	B0EAKM000122	DIODE	[M]
D555	B0AACK000004	DIODE	[M]
D556	B0BA01100004	DIODE	[M]
D557	B0EAKM000117	DIODE	[M]
D558	B0AACK000004	DIODE	[M]
D559	B0AACK000004	DIODE	[M]
D560	B0AACK000004	DIODE	[M]
D561	B0BA01100004	DIODE	[M]
D562	B0AACK000004	DIODE	[M]
D563	B0BA01900005	DIODE	[M]
D564	B0BA01900005	DIODE	[M]
D565	B0BA01900005	DIODE	[M]
D566	B0BA01900005	DIODE	[M]
D597	B0FBAM000009	DIODE	[M]
D598	B0FBAM000009	DIODE	[M]
D599	B0FBAM000009	DIODE	[M]
D601	B0FBAM000009	DIODE	[M]
D602	B0FBAM000009	DIODE	[M]
D603	B0JAPG000019	DIODE	[M]
D604	B0JAPG000019	DIODE	[M]
D605	B0BA01200008	DIODE	[M]
D606	B0BA01200008	DIODE	[M]
D607	B0BA02300017	DIODE	[M]
D608	B0BA01400009	DIODE	[M]
D609	B0BA01900005	DIODE	[M]
D610	B0BA01400009	DIODE	[M]
D611	B0BA01900005	DIODE	[M]
		CONNECTORS	
CN501	K1FB125B0095	SYSTEM CONNECTOR	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
CN502	K1KB07B00020	7P CONNECTOR	[M]
CN503	K1KA15BA0056	15P CONNECTOR	[M]
CN507	K1KA02AA0186	2P CONNECTOR	[M]
CN601	K1KA10AA0319	10P CONNECTOR	[M]
CN602	K1KA08AA0319	8P CONNECTOR	[M]
CN603	K1KA08AA0319	8P CONNECTOR	[M]
CN604	K1KA04BA0125	4P CONNECTOR	[M]
CP502	K1KA07AA0297	CONNECTOR	[M]
T501	G4C8AHD00002	POWER TRANSFORMER	[M] ⚠
T502	G4C2AAJ00005	BACK-UP TRANSFORMER	[M] ⚠
		COMPONENT COMBINATION	
Z501	ERZV10V511CS	ZENER	[M] ⚠
		SPEAKER	
SP1	EAS15PL05B	WOOFER UNIT	[M]
		RELAY	
RLY501	K6B1AEA00003	RELAY	[M] ⚠
		FUSE	
F1	K5D602AQ0002	FUSE	[M] ⚠
		FUSE HOLDERS	
FC501	EYF52BCY	FUSE HOLDER	[M]
FC502	EYF52BCY	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP1	K5G502AA0002	5A FUSE PROTECTOR	[M] ⚠
		HOLDER	
H503	K1YF15000004	15P WIRE HOLDER	[M]
		JACKS	
JK500	K2AB2B000008	JK AC INLET	[M] ⚠
JK501	K4BC06B00043	JK	[M]
JK502	K4BC04B00115	JK SPEAKER	[M]
		EARTH TERMINALS	
E500	K4CZ01000027	TERMINAL	[M]
E501	K4CZ01000027	TERMINAL	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
		WIRES	
W1	REEX0403	PRIMARY WIRE (BROWN)	[M]
W2	REEX0404	PRIMARY WIRE (BLUE)	[M]
W503	REXX0425	15P WIRE	[M]
W601	REXX0434	10P WIRE	[M]
W602	REXX0435	8P WIRE	[M]
W603	REXX0435	8P WIRE	[M]
		RESISTORS	
R401	ERDS2TJ224T	220K 1/4W	[M]
R402	ERDS2TJ102T	1K 1/4W	[M]
R500	ERC12UGK335D	3.3M 1/2W	[M]
R501	ERDS2TJ472T	4.7K 1/4W	[M]
R502	ERDS2TJ472T	4.7K 1/4W	[M]
R505	ERDS2TJ153T	15K 1/4W	[M]
R506	ERDS2TJ153T	15K 1/4W	[M]
R509	ERDS2TJ472T	4.7K 1/4W	[M]
R510	ERDS2TJ472T	4.7K 1/4W	[M]
R511	ERDS2TJ153T	15K 1/4W	[M]
R512	ERDS2TJ153T	15K 1/4W	[M]
R513	ERDS2TJ563T	56K 1/4W	[M]
R514	ERDS2TJ563T	56K 1/4W	[M]
R515	ERDS2TJ563T	56K 1/4W	[M]
R516	ERDS2TJ563T	56K 1/4W	[M]
R519	ERDS2TJ824T	820K 1/4W	[M]
R520	ERDS2TJ223T	22K 1/4W	[M]
R521	ERDS2TJ563T	56K 1/4W	[M]
R522	ERDS2TJ563T	56K 1/4W	[M]
R523	ERDS2TJ124T	120K 1/4W	[M]
R524	ERDS2TJ124T	120K 1/4W	[M]
R525	ERDS2TJ154T	150K 1/4W	[M]
R526	ERDS2TJ124T	120K 1/4W	[M]
R529	ERDS2TJ223T	22K 1/4W	[M]
R530	ERD25FVJ1R0T	1 1/4W	[M]
R531	ERD25FVJ1R0T	1 1/4W	[M]
R532	ERDS2TJ472T	4.7K 1/4W	[M]
R533	ERDS1FVJ100T	10 1/2W	[M]
R534	ERDS1FVJ100T	10 1/2W	[M]
R537	ERDS1FVJ100T	10 1/2W	[M]
R538	ERDS1FVJ100T	10 1/2W	[M]
R545	ERDS2TJ224T	220K 1/4W	[M]
R546	ERDS2TJ102T	1K 1/4W	[M]
R547	ERDS2TJ394T	390K 1/4W	[M]
R548	ERDS2TJ334T	330K 1/4W	[M]
R549	ERDS2TJ392T	3.9K 1/4W	[M]
R550	ERDS2TJ103T	10K 1/4W	[M]
R551	ERDS2TJ103T	10K 1/4W	[M]
R558	ERDS2TJ104T	100K 1/4W	[M]
R559	ERDS2TJ103T	10K 1/4W	[M]
R560	ERDS2TJ151T	150 1/4W	[M]
R561	ERDS1FVJ392T	3.9K 1/2W	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
R562	ERDS2TJ472T	4.7K 1/4W	[M]
R563	ERDS1FVJ102T	1K 1/2W	[M]
R564	ERDS2TJ224T	220K 1/4W	[M]
R565	ERDS1FVJ392T	3.9K 1/2W	[M]
R567	ERDS1FVJ152T	1.5K 1/2W	[M]
R568	ERDS2TJ151T	150 1/4W	[M]
R569	ERDS1FVJ152T	1.5K 1/2W	[M]
R570	ERDS2TJ103T	10K 1/4W	[M]
R571	ERDS1FVJ222T	2.2K 1/2W	[M]
R577	ERDS2TJ152T	1.5K 1/4W	[M]
R578	ERDS2TJ103T	10K 1/4W	[M]
R579	ERDS2TJ332T	3.3K 1/4W	[M]
R580	ERDS2TJ220T	22 1/4W	[M]
R581	ERDS2TJ682T	6.8K 1/4W	[M]
R582	ERDS2TJ224T	220K 1/4W	[M]
R583	ERDS2TJ101T	100 1/4W	[M]
R584	ERDS2TJ473T	47K 1/4W	[M]
R587	ERDS2TJ272T	2.7K 1/4W	[M]
R588	ERDS2TJ151T	150 1/4W	[M]
R589	ERDS2TJ103T	10K 1/4W	[M]
R590	ERDS2TJ102T	1K 1/4W	[M]
R600	ERDS2TJ473T	47K 1/4W	[M]
R601	ERDS2TJ473T	47K 1/4W	[M]
R602	ERDS2TJ472T	4.7K 1/4W	[M]
R603	ERDS2TJ103T	10K 1/4W	[M]
R604	ERDS2TJ225T	2.2M 1/4W	[M]
R606	ERG2SJ220E	22 2W	[M]
R609	ERDS1FVJ152T	1.5K 1/2W	[M]
R610	ERD2FCVJ4R7T	4.7 1/4W	[M]
R611	ERD2FCVJ4R7T	4.7 1/4W	[M]
R611	ERDS2TJ103T	10K 1/4W	[M]
R612	ERD2FCVJ4R7T	4.7 1/4W	[M]
R613	ERDS2TJ272T	2.7K 1/4W	[M]
R614	ERDS2TJ272T	2.7K 1/4W	[M]
R615	ERDS2TJ473T	47K 1/4W	[M]
R616	ERDS2TJ472T	4.7K 1/4W	[M]
R617	ERDS2TJ822T	8.2K 1/4W	[M]
R618	ERDS2TJ473T	47K 1/4W	[M]
R619	ERDS2TJ563T	56K 1/4W	[M]
R620	ERDS2TJ563T	56K 1/4W	[M]
R621	ERDS2TJ273T	27K 1/4W	[M]
R622	ERDS2TJ103T	10K 1/4W	[M]
R623	ERDS2TJ392T	3.9K 1/4W	[M]
R624	ERDS2TJ392T	3.9K 1/4W	[M]
R625	ERDS2TJ153T	15K 1/4W	[M]
R626	ERDS2TJ103T	10K 1/4W	[M]
R626	ERDS2TJ153T	15K 1/4W	[M]
R627	ERDS2TJ103T	10K 1/4W	[M]
R627	ERDS2TJ124T	120K 1/4W	[M]
R628	ERDS2TJ154T	150K 1/4W	[M]
R631	ERDS1FVJ100T	10 1/2W	[M]
R632	ERDS1FVJ100T	10 1/2W	[M]
R633	ERDS2TJ824T	820K 1/4W	[M]
R634	ERDS2TJ473T	47K 1/4W	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
R635	ERDS2TJ473T	47K 1/4W	[M]
		CAPACITORS	
C503	F1D1H102A012	1000P 50V	[M]
C504	F1D1H102A012	1000P 50V	[M]
C505	F1D1H102A012	1000P 50V	[M]
C506	F1D1H102A012	1000P 50V	[M]
C507	F1D1H180A015	18P 50V	[M]
C508	F1D1H180A015	18P 50V	[M]
C509	F1D1H220A015	22P 50V	[M]
C510	F1D1H220A015	22P 50V	[M]
C513	F1D1H473A012	0.047 50V	[M]
C514	ECEA0JKA101B	100 6.3V	[M]
C515	F1B2H103A060	0.01 500V	[M]
C516	F1B2H103A060	0.01 500V	[M]
C517	F1D1C103A007	0.01 16V	[M]
C518	F1D1H473A012	0.047 50V	[M]
C519	F1D1H473A012	0.047 50V	[M]
C522	F1D1H473A012	0.047 50V	[M]
C523	F1D1H473A012	0.047 50V	[M]
C529	F1D1H1040002	0.1 50V	[M]
C530	F1D1H102A012	1000P 50V	[M]
C531	F1D1H102A012	1000P 50V	[M]
C532	F1D1H102A012	1000P 50V	[M]
C533	F1D1H102A012	1000P 50V	[M]
C534	ECA1HM330B	33 50V	[M]
C543	F1D1H102A012	1000P 50V	[M]
C544	ECA1HM101B	100 50V	[M]
C545	F1D1H1040002	0.1 50V	[M]
C546	F2A1G332A003	3300P 100V	[M]
C547	F2A1G472A003	4700P 100V	[M]
C548	F2A1G472A003	4700P 100V	[M]
C549	F2A1G332A003	3300P 100V	[M]
C550	F1D1C103A007	0.01 16V	[M]
C551	F1D1H103A046	0.01 50V	[M]
C553	ECQE2104KF3	0.1 250V	[M]
C554	ECQE1104KF3	0.1 100V	[M]
C555	ECEA1VKA4R7B	4.7 35V	[M]
C556	F1D1H103A046	0.01 50V	[M]
C557	ECEA1AKA470B	47 10V	[M]
C558	ECA1CM102B	1000 16V	[M]
C559	F1D1H103A046	0.01 50V	[M]
C560	ECA1HM100B	10 50V	[M]
C569	F1D1H473A012	0.047 50V	[M]
C570	ECA1EM331B	330 25V	[M]
C571	ECA1CM102B	1000 16V	[M]
C572	ECA1HM101B	100 50V	[M]
C573	F1D1H102A012	1000P 50V	[M]
C574	F1D1H103A046	0.01 50V	[M]
C575	F1D1H103A046	0.01 50V	[M]
C576	F2J1H100A048	10P 50V	[M]
C577	ECEA1CKA100B	10 16V	[M]
C578	F1D1H103A046	0.01 50V	[M]

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Ref. No.	Part No.	Part Name & Description	Remarks
C579	F1D1H103A046	0.01 50V	[M]
C580	ECEA1HKA2R2B	2.2 50V	[M]
C601	F2A1G332A003	3300P 100V	[M]
C602	F2A1G472A003	4700P 100V	[M]
C603	F2A1G472A003	4700P 100V	[M]
C604	F2A1G332A003	3300P 100V	[M]
C605	ECQE1104KF3	0.1 100V	[M]
C606	ECQE1104KF3	0.1 100V	[M]
C607	F1D1H180A015	18P 50V	[M]
C608	F1D1H180A015	18P 50V	[M]
C609	F1B2H103A060	0.01 500V	[M]
C610	F1B2H103A060	0.01 500V	[M]
C611	F1D1H102A012	1000P 50V	[M]
C612	F1D1H102A012	1000P 50V	[M]
C613	F1B1H103A153	0.01 50V	[M]
C614	F1B1H103A153	0.01 50V	[M]
C615	F1D1H473A012	0.047 50V	[M]
C616	F1D1H473A012	0.047 50V	[M]
C619	F1D1H473A012	0.047 50V	[M]
C620	F1D1H1040002	0.1 50V	[M]
C621	F1D1H1040002	0.1 50V	[M]
C647	ECA0JM471B	470 6.3V	[M]
C648	F1D1H1040002	0.1 50V	[M]

14.3. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPNX0346	POLYFOAM UNIT	[M]
P2	RPFX0115	MIRAMAT BAG	[M]

14.4. Packaging

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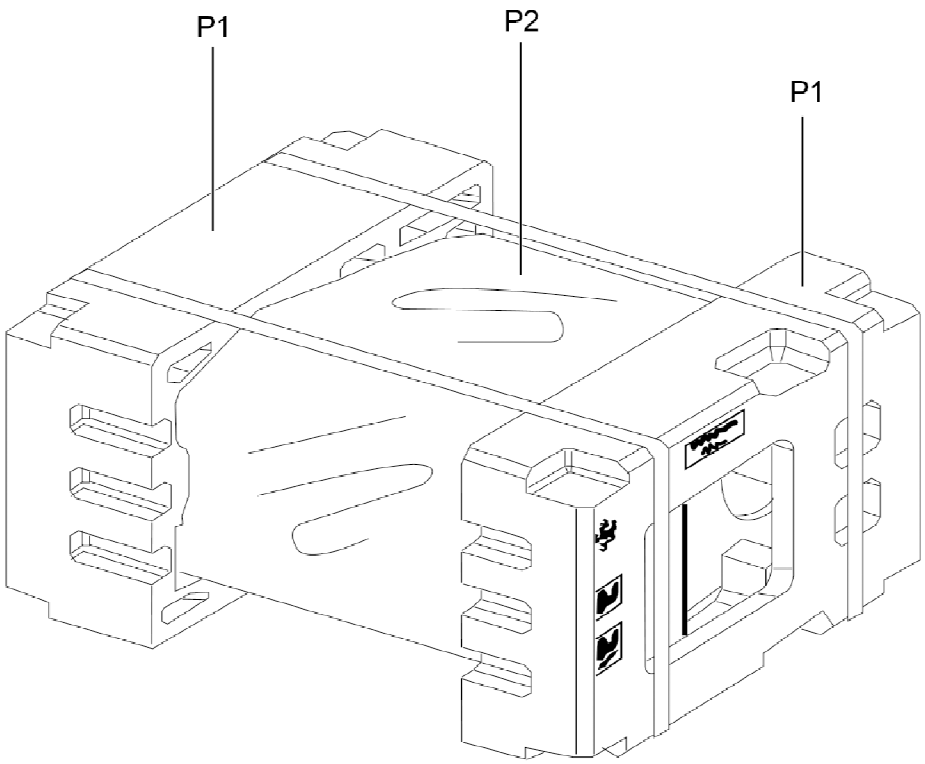

FLE0508/P/A/S/E/N

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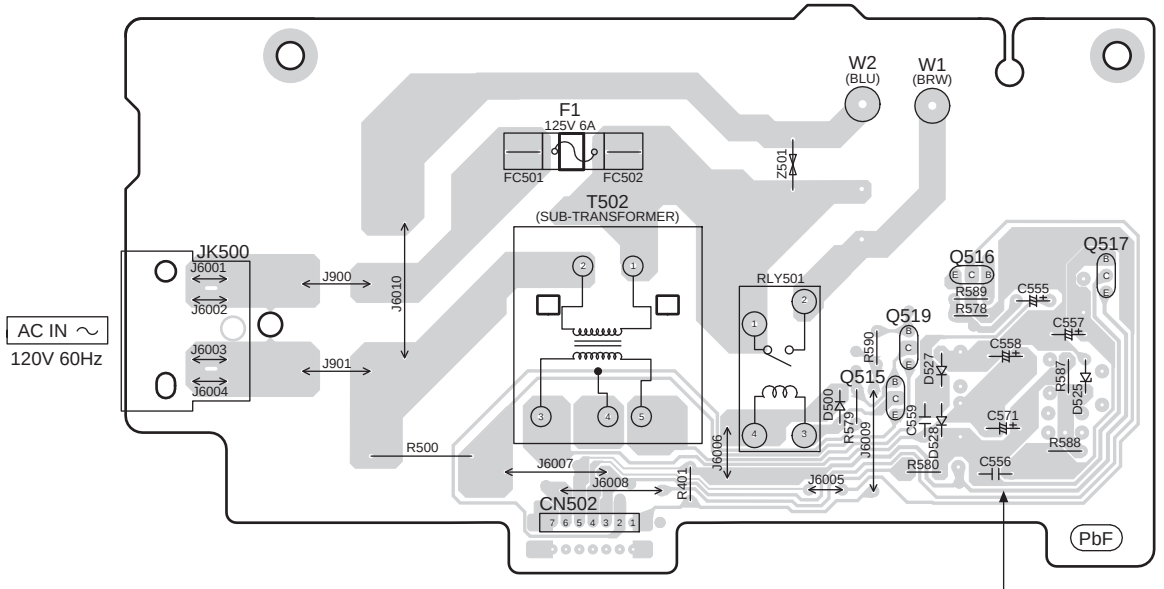
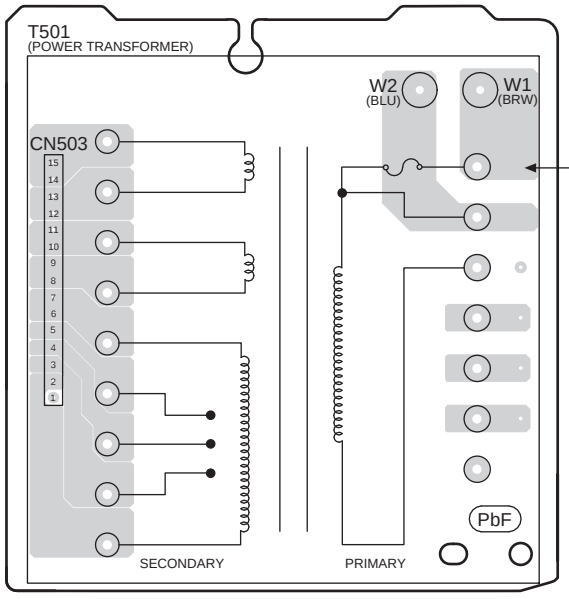
B AC INLET P.C.B (REPX0471E)



CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B

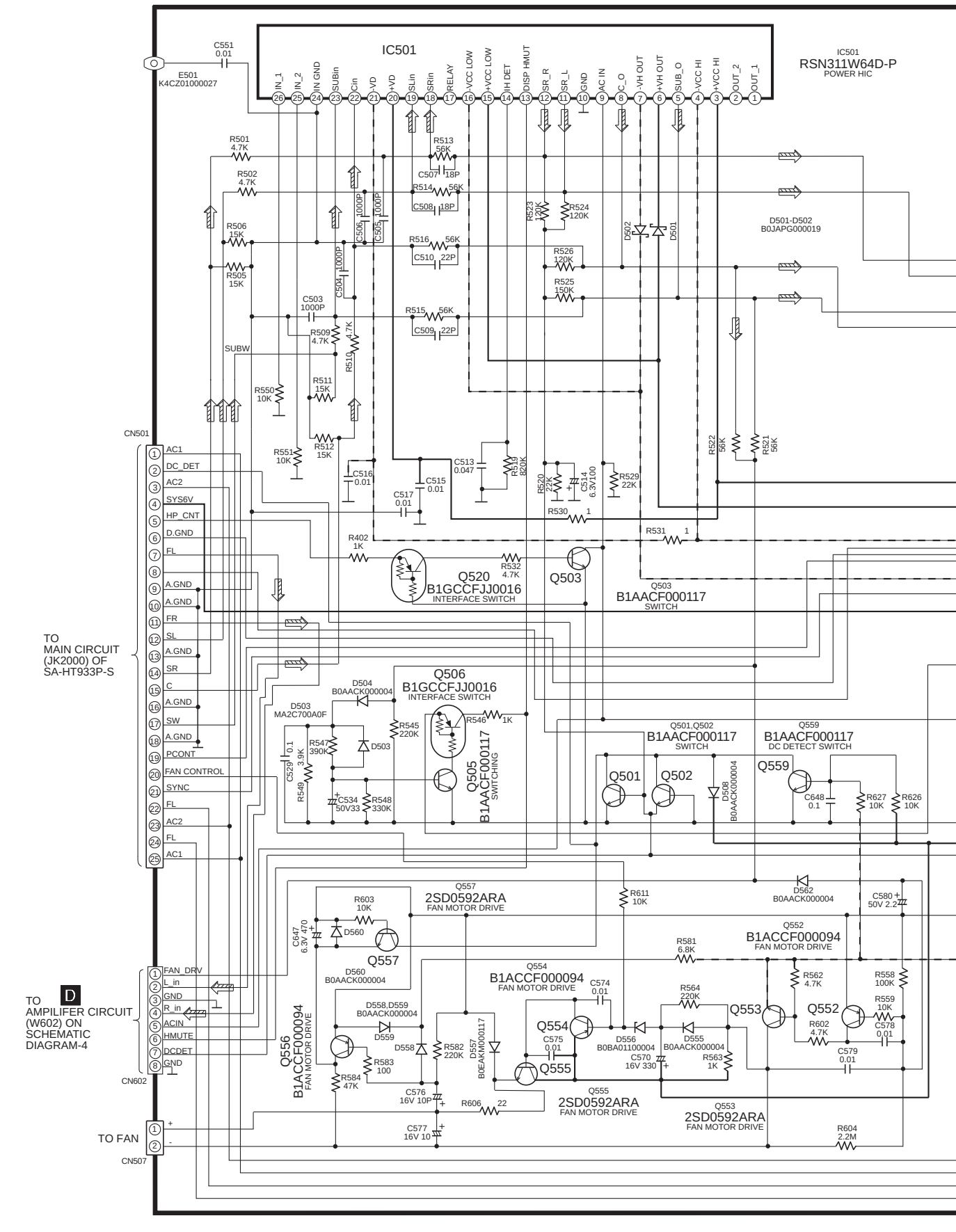
C TRANSFORMER P.C.B (REPX0471E)



SCHEMATIC DIAGRAM-1

A POWER CIRCUIT

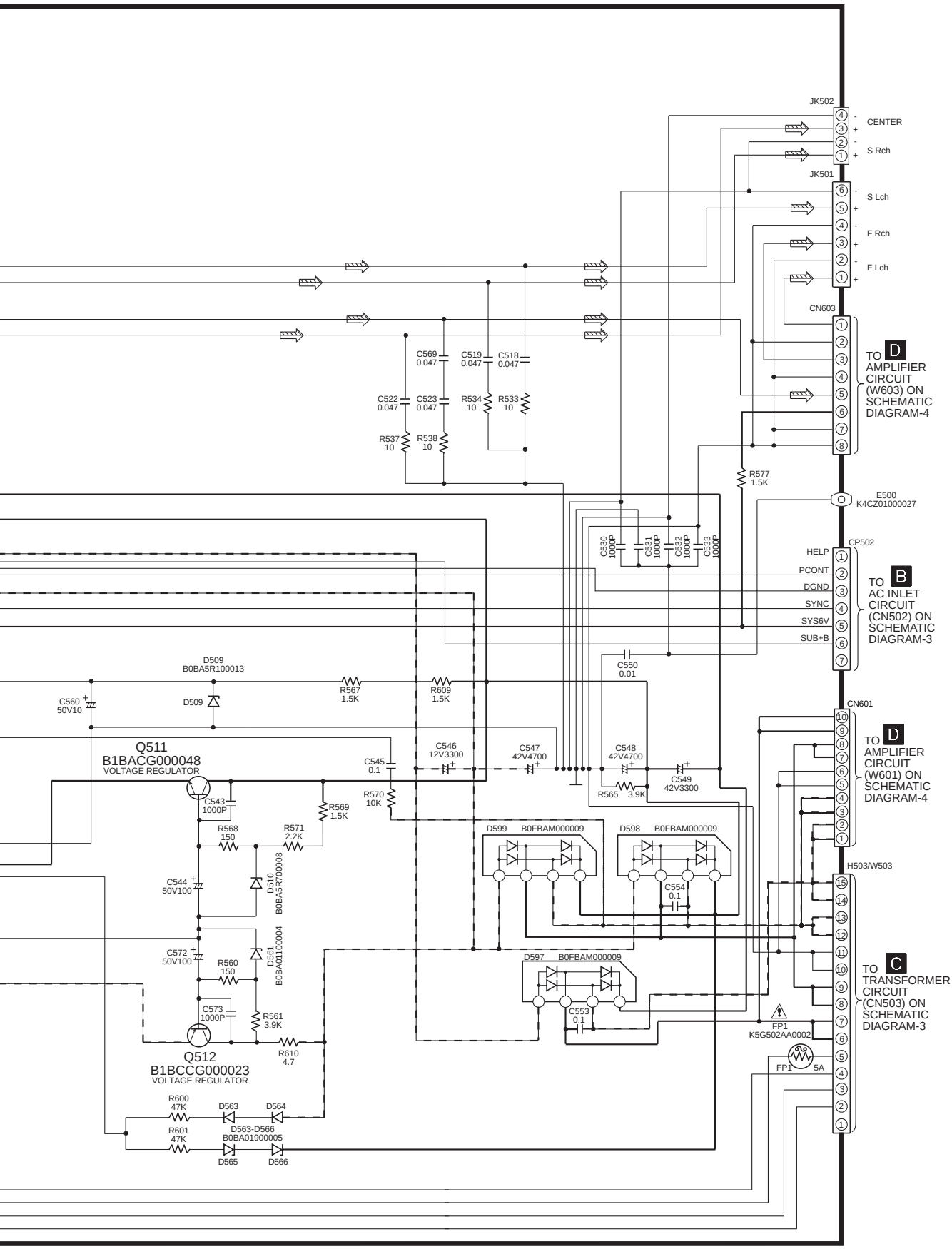
– – – : -B SIGNAL LINE
——— : +B SIGNAL LINE
⇒ : MAIN SIGNAL LINE



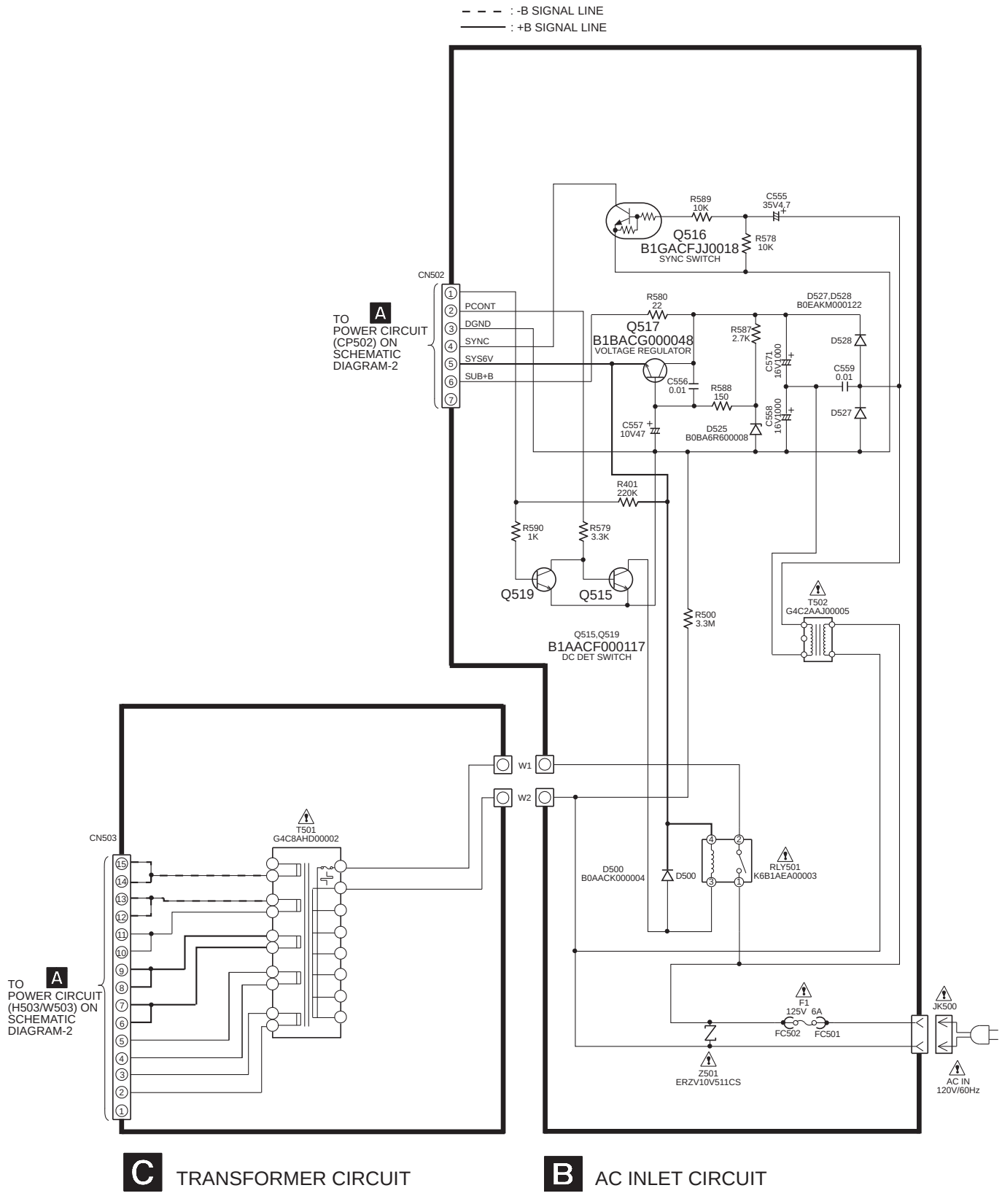
SCHEMATIC DIAGRAM-2

A POWER CIRCUIT

– – – : -B SIGNAL LINE
——— :+B SIGNAL LINE
⇒ : MAIN SIGNAL LINE



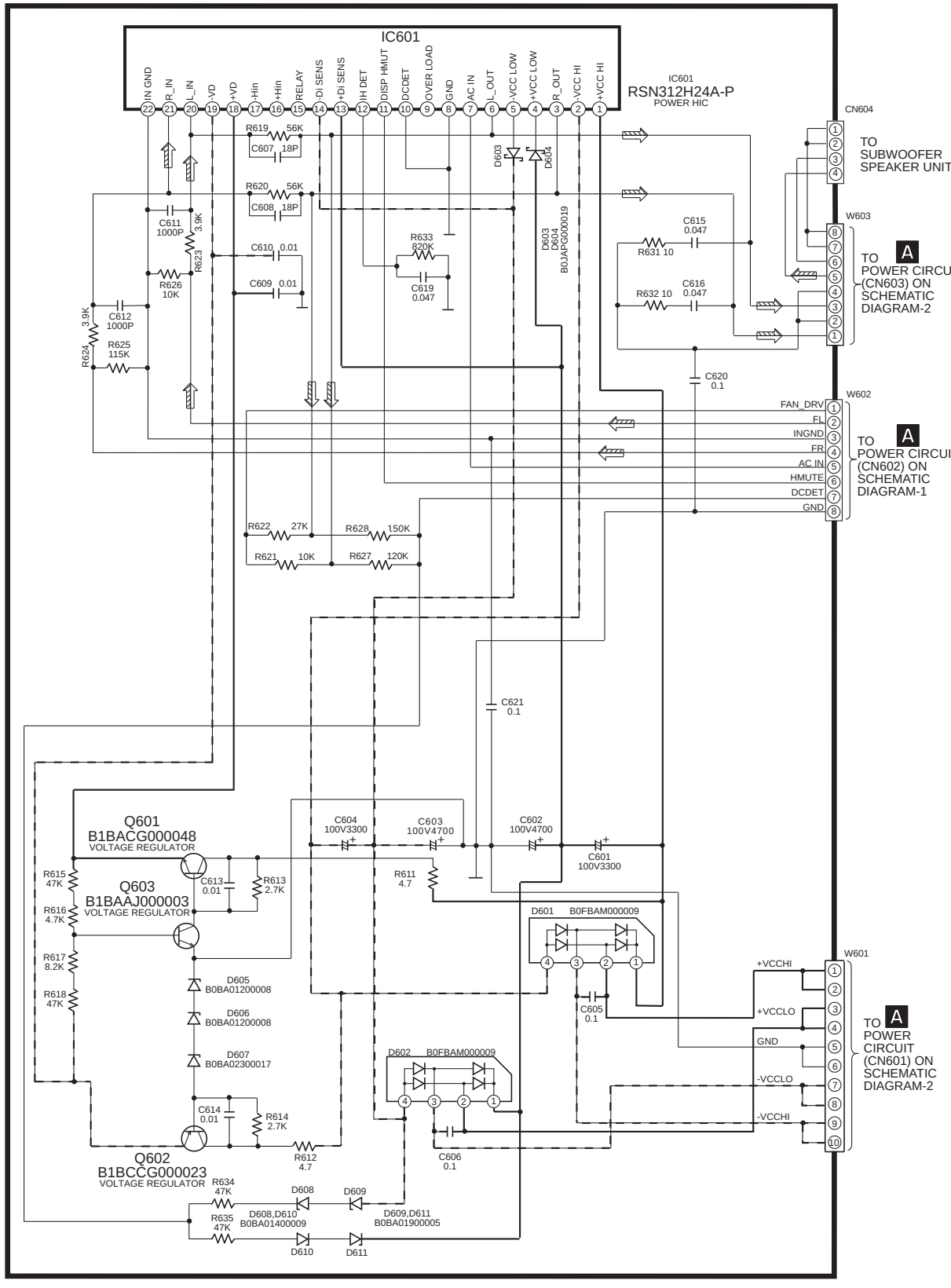
SCHEMATIC DIAGRAM-3



SCHEMATIC DIAGRAM-4

D AMPILIFIER CIRCUIT

: -B SIGNAL LINE
: +B SIGNAL LINE
: MAIN SIGNAL LINE



AC INLET P.C.B.

Ref No.	Q515				Q516				Q517				Q519							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	0	0.1	0.8		0	2.9	-0.3		5.9	10.9	6.5		0	0.8	0					
STANDBY	0	5.9	0		0	2.8	-0.3		5.9	7.9	6.5		0	0	0					

POWER P.C.B.

Ref No.	IC501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	28.3	28.3	58.7	-58.6	0	29.0	-29.0	0	0	0	0	0	0	-0.2	29.2	-29.2	-10.5	0	0	58.6
STANDBY	-0.1	-0.1	16.3	0.3	0	0	0	0	0	0	0	0	0	0	-0.1	0	0	0	0	15.6

Ref No.	IC501																			
MODE	21	22	23	24	25	26														
CD PLAY	-58.6	0	0	0	0	0														
STANDBY	0.3	0	0	0	0	0														

Ref No.	Q501				Q502				Q503				Q505				Q506			
MODE	E	C	B		E	C	B		1	2	3		E	C	B		E	C	B	
CD PLAY	0	5.0	0		0	5.0	0		0	0	-1.7		0	0.8	0		0.8	0	0.8	
STANDBY	0	0.6	0		0	0.6	0		0	0	0.7		0	-0.2	0		-0.2	0	-0.2	

Ref No.	Q511				Q512				Q520				Q552				Q553			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	5.2	29.3	5.7		-11.2	-29.2	-11.8		0	-1.5	0		0	-11.2	0.2		-11.2	5.1	-11.2	
STANDBY	0.3	-0.2	-0.2		0.3	0	0		3.6	3.6	0		0	0.2	0		0.3	0.3	0.3	

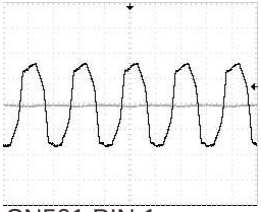
Ref No.	Q554				Q555				Q556				Q557							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	5.2	-	4.7		5.1	5.2	-		0	0.3	-0.2		0.3	5.0	0					
STANDBY	0.3	0.2	0.1		0.4	0.3	0.2		0	0	0		0.3	0.6	0					

AMPLIFIER P.C.B.

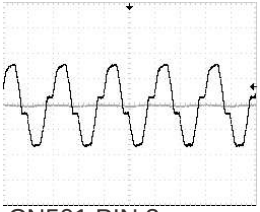
Ref No.	IC601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	58.8	-58.7	0	29.0	-29.0	0	0	0	-12.2	0	0	-0.2	29.3	-29.3	-10.3	0	0	48.2	-49.8	0
STANDBY	1.1	-0.5	0	1.4	-0.8	0	0	0	0.2	0	0	0	1.4	-0.8	0	0	0	0.5	0	0

Ref No.	IC601																			
MODE	21	22																		
CD PLAY	0	0																		
STANDBY	0	0																		

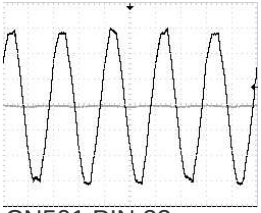
Ref No.	Q601				Q602				Q603											
MODE	E	C	B		E	C	B		1	2	3									
CD PLAY	48.2	58.7	48.7		-49.7	-58.4	-50.3		0	48.6	0.6									
STANDBY	0.9	1.3	1.3		-0.3	-0.7	-0.7		0	1.3	0.3									



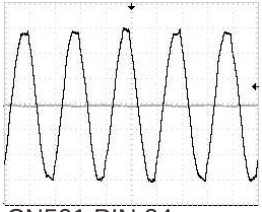
CN501 PIN 1
CD PLAY
16.4Vp-p (10msec.div)



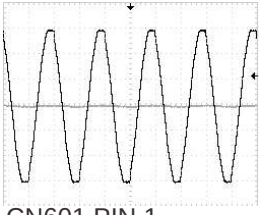
CN501 PIN 3
CD PLAY
16.2Vp-p (10msec.div)



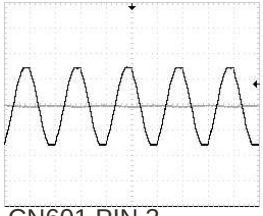
CN501 PIN 22
CD PLAY
6.16Vp-p (10msec.div)



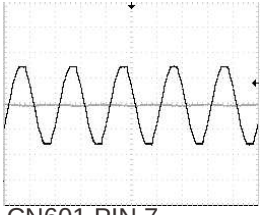
CN501 PIN 24
CD PLAY
6.08Vp-p (10msec.div)



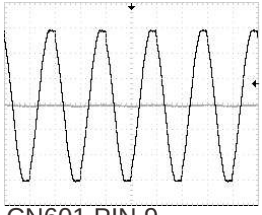
CN601 PIN 1
CD PLAY
120Vp-p (10msec.div)



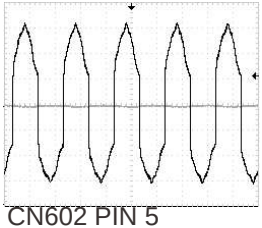
CN601 PIN 3
CD PLAY
61.6Vp-p (10msec.div)



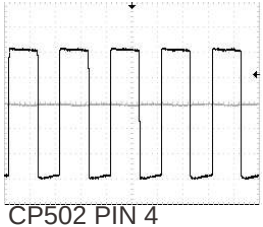
CN601 PIN 7
CD PLAY
62.4Vp-p (10msec.div)



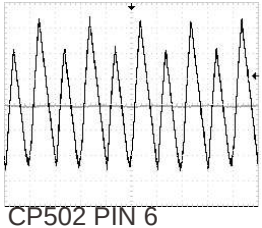
CN601 PIN 9
CD PLAY
120Vp-p (10msec.div)



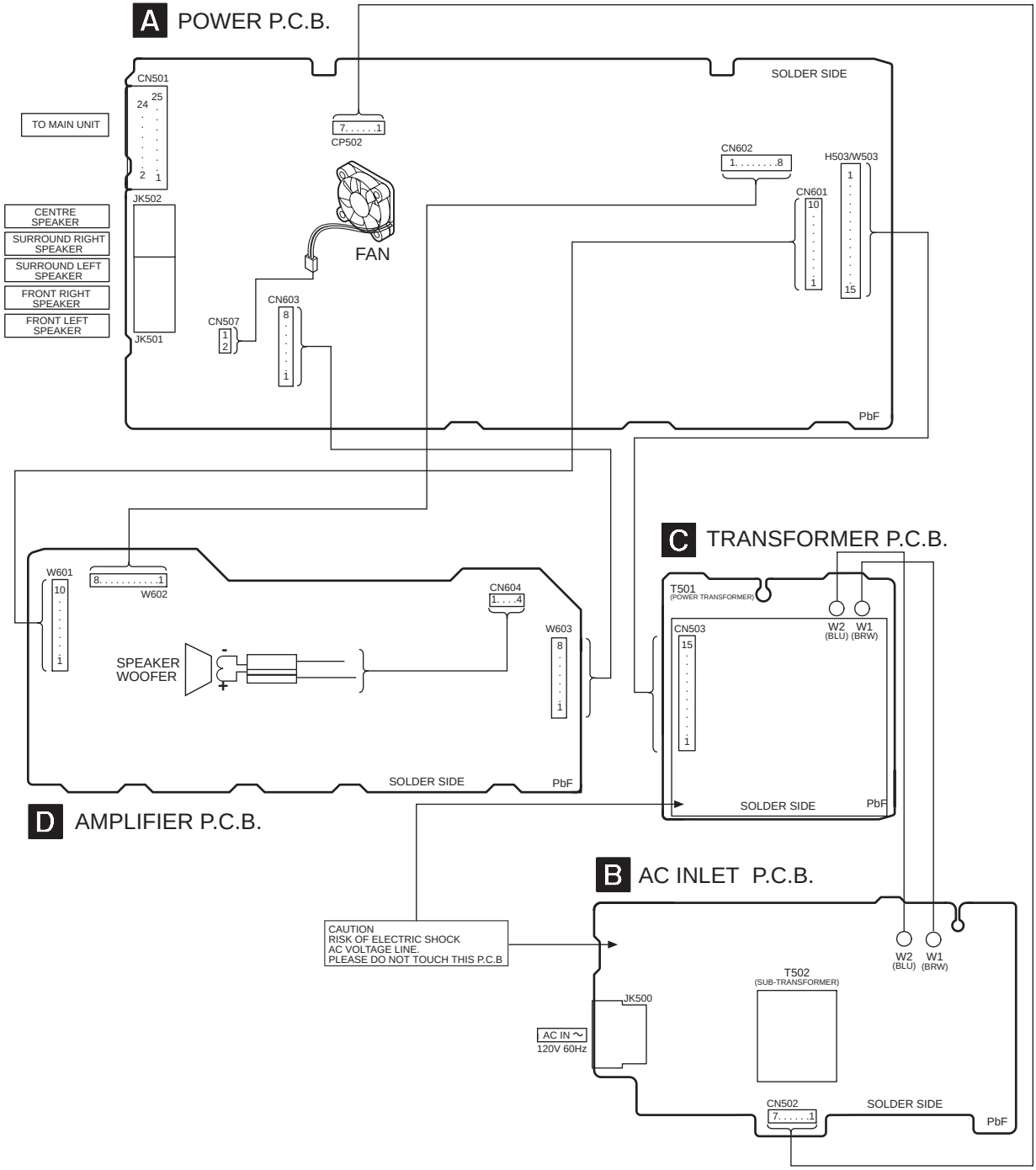
CN602 PIN 5
CD PLAY
3.16Vp-p (10msec.div)

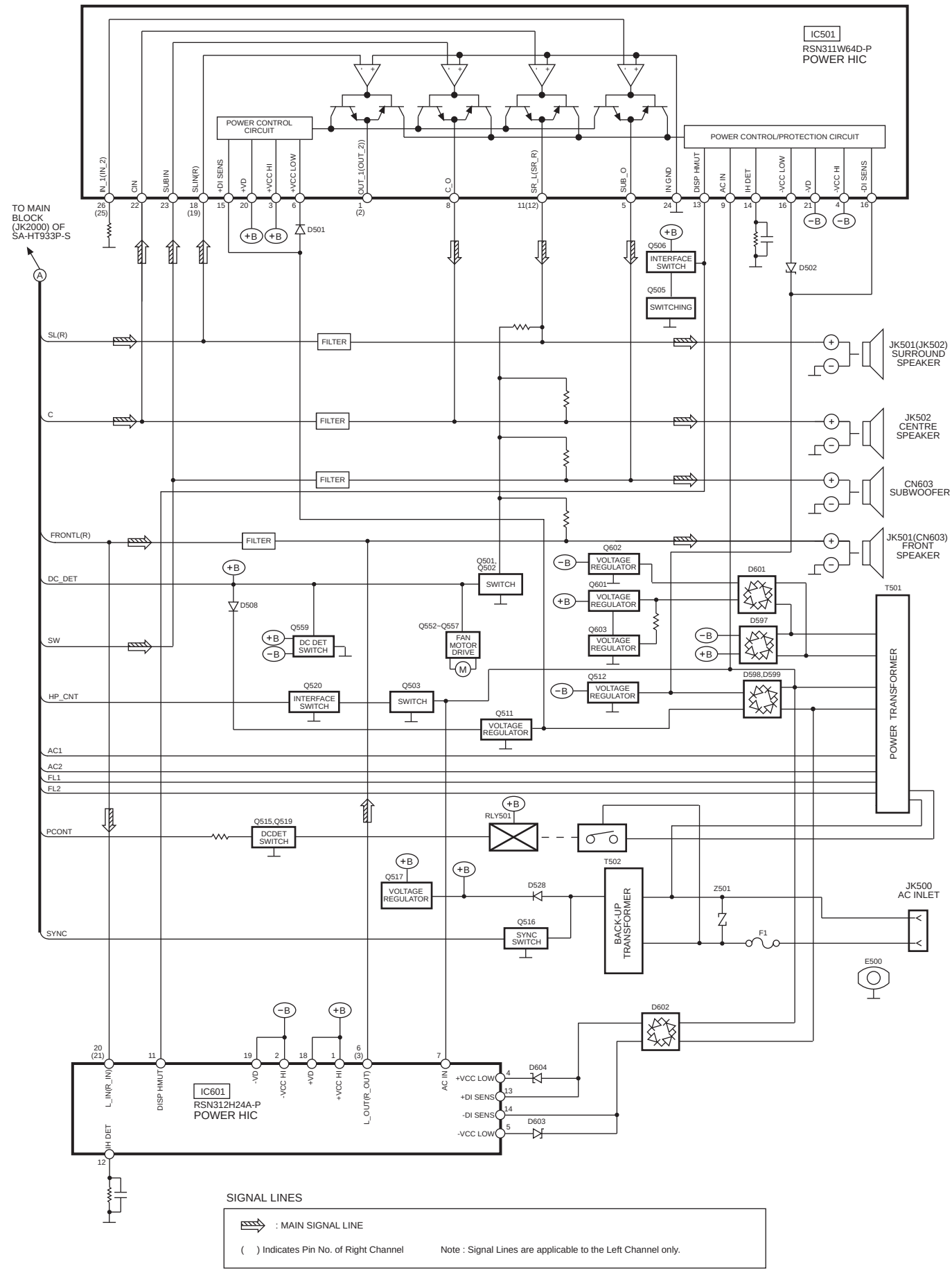


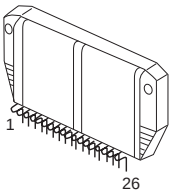
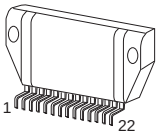
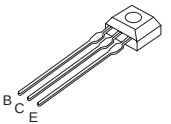
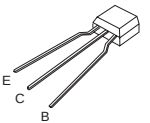
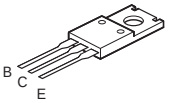
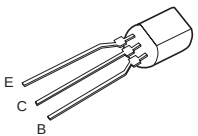
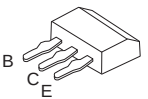
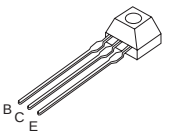
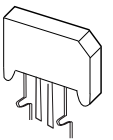
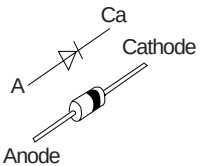
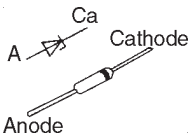
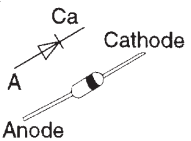
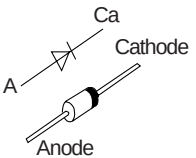
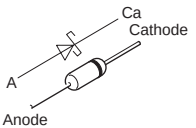
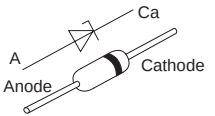
CP502 PIN 4
CD PLAY
5.16Vp-p (10msec.div)



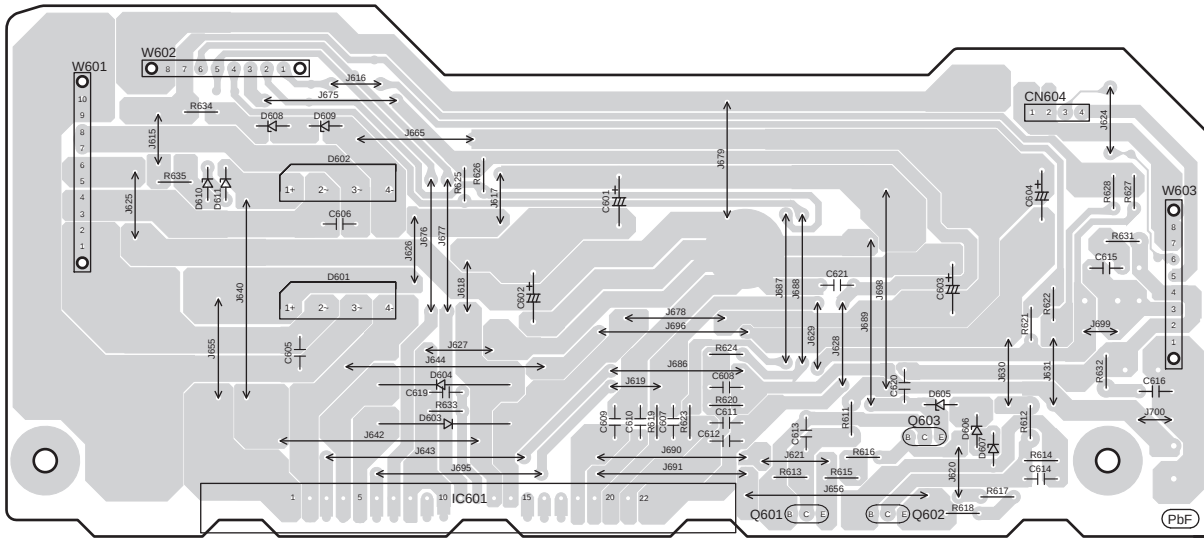
CP502 PIN 6
CD PLAY
1.21Vp-p (10msec.div)


A POWER P.C.B.
SOLDER SIDE
CN501
24
25
2
1
TO MAIN UNIT
CP502
7. 1
CN602
1. 8
H503/W503
1
15
CN601
10
1
JK502
CENTRE SPEAKER
SURROUND RIGHT SPEAKER
SURROUND LEFT SPEAKER
FRONT RIGHT SPEAKER
FRONT LEFT SPEAKER
JK501
FAN
CN507
1
2
CN603
8
1
PbF
C TRANSFORMER P.C.B.
T501
(POWER TRANSFORMER)
CN503
15
1
W2 (BLU)
W1 (BRW)
SOLDER SIDE
PbF
W601
10
1
8. 1
W602
CN604
1. . . .4
W603
8
1
SPEAKER WOOFER
-
+
SOLDER SIDE
PbF
D AMPLIFIER P.C.B.
B AC INLET P.C.B.
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B
W2 (BLU)
W1 (BRW)
T502
(SUB-TRANSFORMER)
JK500
AC IN ~
120V 60Hz
CN502
7. 1
SOLDER SIDE
PbF


IC501
RSN311W64D-P
POWER HIC
POWER CONTROL CIRCUIT
POWER CONTROL/PROTECTION CIRCUIT
IN_1(IN_2)
CIN
SUBIN
SLIN(R)
+DI SENS
+VD
+VCC HI
+VCC LOW
OUT_1(OUT_2)
C_O
SR_L(SR_R)
SUB_O
IN GND
DISP HMUT
AC IN
IH DET
-VCC LOW
-VD
-VCC HI
-DI SENS
TO MAIN BLOCK (JK2000) OF SA-HT933P-S
D501
Q506
INTERFACE SWITCH
Q505
SWITCHING
D502
SL(R)
FILTER
JK501(JK502) SURROUND SPEAKER
C
JK502 CENTRE SPEAKER
CN603 SUBWOOFER
FRONTL(R)
JK501(CN603) FRONT SPEAKER
DC_DET
SW
HP_CNT
AC1
AC2
FL1
FL2
PCONT
SYNC
D508
Q559
DC DET SWITCH
Q501, Q502
SWITCH
Q552~Q557
FAN MOTOR DRIVE
Q602
VOLTAGE REGULATOR
Q601
VOLTAGE REGULATOR
Q603
VOLTAGE REGULATOR
Q512
VOLTAGE REGULATOR
Q511
VOLTAGE REGULATOR
Q520
INTERFACE SWITCH
Q503
SWITCH
D601
D597
D598,D599
T501
POWER TRANSFORMER
Q515,Q519
DCDET SWITCH
RLY501
Q517
VOLTAGE REGULATOR
D528
Q516
SYNC SWITCH
T502
BACK-UP TRANSFORMER
Z501
F1
JK500 AC INLET
E500
D602
D604
D603
IC601
RSN312H24A-P
POWER HIC
L_IN(R_IN)
DISP HMUT
-VD
-VCC HI
+VD
+VCC HI
L_OUT(R_OUT)
AC IN
+VCC LOW
+DI SENS
-DI SENS
-VCC LOW
IH DET
SIGNAL LINES
: MAIN SIGNAL LINE
( ) Indicates Pin No. of Right Channel
Note : Signal Lines are applicable to the Left Channel only.

RSN311W64D-P 	RSN312H24A-P 	B1AACF000117 B1ACCF000094 	B1GCCFJJ0016 	B1BACG000048 B1BCCG000023 
2SD0592ARA 	B1BAAJ000003 	B1GACFJJ0018 	B0FBAM000009 	B0EAKM000122 
B0BA01900005 B0BA01100004 B0BA01400009 B0BA5R700008 	B0AACK000004 	B0JAPG000019 B0EAKM000117 	MA2C700A0F 	B0BA5R100013 B0BA01200008 B0BA6R600008 B0BA02300017 

D AMPLIFIER P.C.B (REPX0472A)



A B C D E F G

1 2 3 4 5 6 7 8 9

A POWER P.C.B (REPX0471E)

TO MAIN UNIT

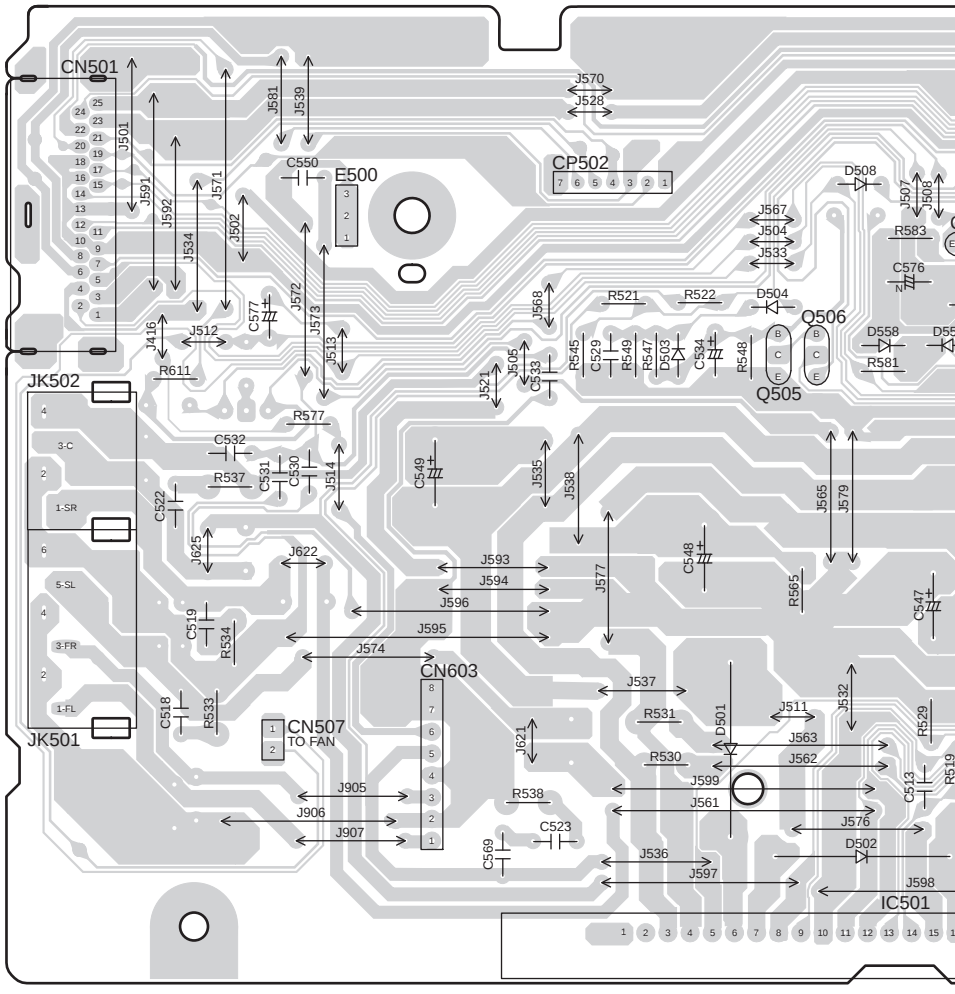
CENTRE SPEAKER

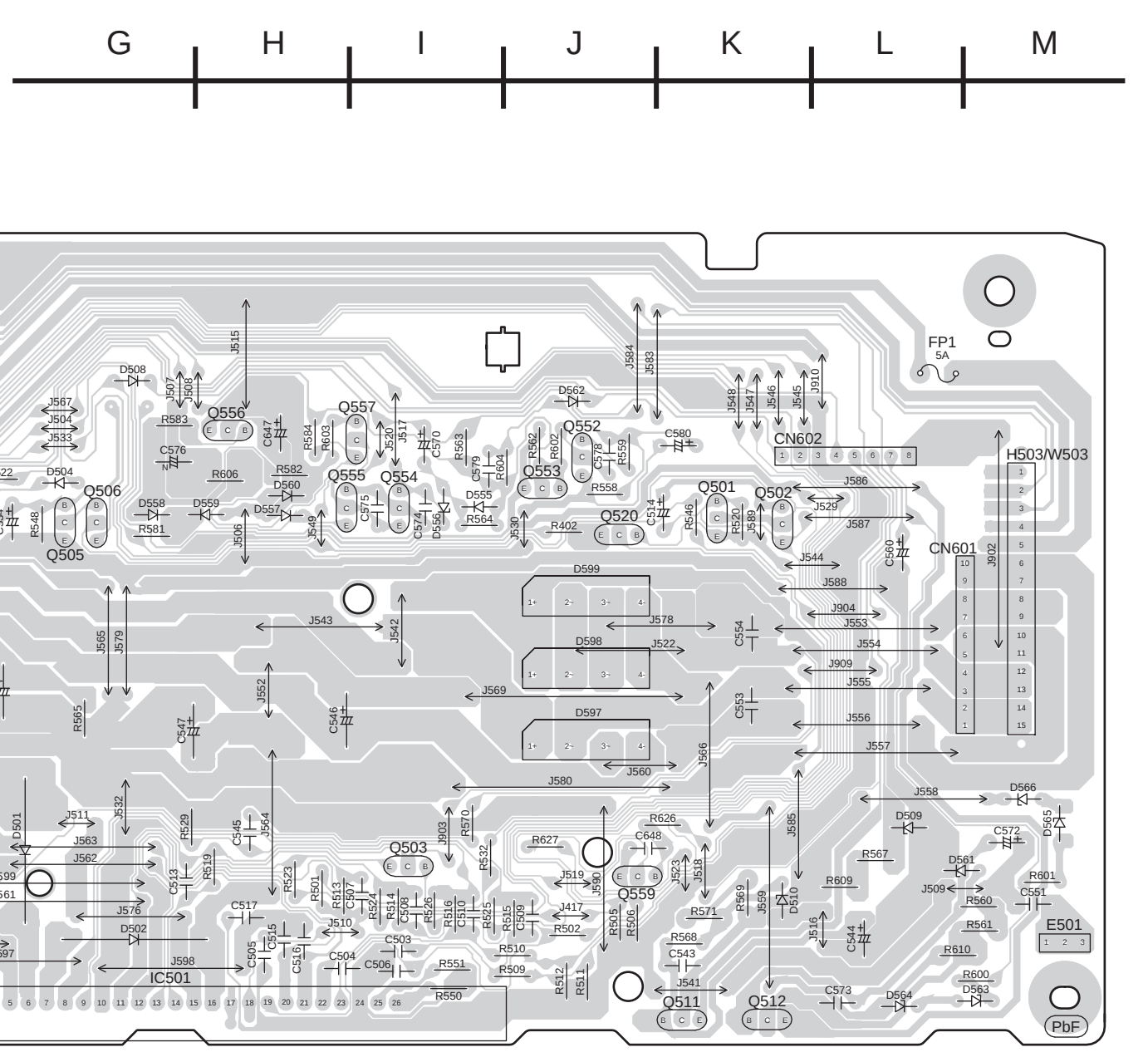
SURROUND RIGHT SPEAKER

SURROUND LEFT SPEAKER

FRONT RIGHT SPEAKER

FRONT LEFT SPEAKER




G
H
I
J
K
L
M
FP1
5A
CN602
H503/W503
CN601
E501
PbF
IC501
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Q503
Q505
Q506
Q511
Q512
Q520
Q552
Q553
Q554
Q555
Q556
Q557
Q559
D597
D598
D599